25-90
920

#5

OIPE

RAW SEQUENCE LISTING DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:03

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

ENTERED

p.5

```
     4 <110> APPLICANT: Haygood, M.
     5       Davidson, S.K.
     6       Allen, S.W.
     7       Hildebrand, M.
     9 <120> TITLE OF INVENTION: Bryostatins, Bryopyrans and Polyketides: Compositions and
Methods
    11 <130> FILE REFERENCE: 1133.010US1
    13 <140> CURRENT APPLICATION NUMBER: US 09/775,938A
C--> 14 <141> CURRENT FILING DATE: 2001-08-30
    16 <150> PRIOR APPLICATION NUMBER: PCT/US00/21326
    17 <151> PRIOR FILING DATE: 2000-08-04
    19 <150> PRIOR APPLICATION NUMBER: US 60/147,283
    20 <151> PRIOR FILING DATE: 1999-08-04
    22 <160> NUMBER OF SEQ ID NOS: 38
    24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
    26 <210> SEQ ID NO: 1
    27 <211> LENGTH: 17
    28 <212> TYPE: DNA
    29 <213> ORGANISM: Endobugula sertula
    31 <220> FEATURE:
    32 <221> NAME/KEY: misc_feature
    33 <222> LOCATION: (1)...(17)
    34 <223> OTHER INFORMATION: N in this sequence refers to I or inosine.
    36 <400> SEQUENCE: 1
W--> 37 acrtgngcrt tngtncc                                                    17
    39 <210> SEQ ID NO: 2
    40 <211> LENGTH: 15
    41 <212> TYPE: DNA
    42 <213> ORGANISM: Endobugula sertula
    44 <220> FEATURE:
    45 <221> NAME/KEY: misc_feature
    46 <222> LOCATION: (1)...(15)
    47 <223> OTHER INFORMATION: N in this sequence refers to I or inosine.
    49 <400> SEQUENCE: 2
W--> 50 ncayggnacn ggnac                                                      15
    52 <210> SEQ ID NO: 3
    53 <211> LENGTH: 18
    54 <212> TYPE: DNA
    55 <213> ORGANISM: Endobugula sertula
    57 <400> SEQUENCE: 3
    58 acggacaagc gtcattac                                                    18
    61 <210> SEQ ID NO: 4
    62 <211> LENGTH: 18
    63 <212> TYPE: DNA
    64 <213> ORGANISM: Endobugula sertula
    66 <400> SEQUENCE: 4
    67 acggacaagc gtcattac                                                    18
    69 <210> SEQ ID NO: 5
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RAW SEQUENCE LISTING DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:03

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

70 <211> LENGTH: 29
71 <212> TYPE: DNA
72 <213> ORGANISM: Endobugula sertula
74 <400> SEQUENCE: 5
75 gttgtctttg cagcatcgca tgttaccac 29
77 <210> SEQ ID NO: 6
78 <211> LENGTH: 25
79 <212> TYPE: DNA
80 <213> ORGANISM: Endobugula sertula
82 <400> SEQUENCE: 6
83 cacgcccgct atcccagcac ctacc 25
85 <210> SEQ ID NO: 7
86 <211> LENGTH: 22
87 <212> TYPE: DNA
88 <213> ORGANISM: Endobugula sertula
90 <400> SEQUENCE: 7
91 tgctatttga tgagcccgcg tt 22
93 <210> SEQ ID NO: 8
94 <211> LENGTH: 19
95 <212> TYPE: DNA
96 <213> ORGANISM: Endobugula sertula
98 <400> SEQUENCE: 8
99 catcgctgct tcgcaaccc 19
101 <210> SEQ ID NO: 9
102 <211> LENGTH: 315
103 <212> TYPE: DNA
104 <213> ORGANISM: Endobugula sertula
106 <400> SEQUENCE: 9
107 aaattgggtg atccgataga agtcgagaca ttggcagaat cgtttcgagt ctatacggac 60
108 aagcgtcatt actgtgctct ggggtcggta aaaagtaata ttggtcattt gggggtaggt 120
109 gctgggatag cgggcgtgac caaagtattg ttgtctttgc agcatcgcat gttaccaccg 180
110 acgattcatt gtgaggatgt aaacccacag attgcgttgg aaggtagccc cttttatatc 240
111 aatacggaat taaagccttg gcagtctggt gacggtatac cacgacgggc tggtgtcagt 300
112 tcttttggtg tcagt 315
114 <210> SEQ ID NO: 10
115 <211> LENGTH: 105
116 <212> TYPE: PRT
117 <213> ORGANISM: Endobugula sertula
119 <400> SEQUENCE: 10
120 Lys Leu Gly Asp Pro Ile Glu Val Glu Thr Leu Ala Glu Ser Phe Arg
121 1 5 10 15
122 Val Tyr Thr Asp Lys Arg His Tyr Cys Ala Leu Gly Ser Val Lys Ser
123 20 25 30
124 Asn Ile Gly His Leu Gly Val Gly Ala Gly Ile Ala Gly Val Thr Lys
125 35 40 45
126 Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys
127 50 55 60
128 Glu Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile
129 65 70 75 80

RAW SEQUENCE LISTING DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:03

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

```
130 Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg
131                 85                  90                  95
132 Ala Gly Val Ser Ser Phe Gly Val Ser
133             100                 105
135 <210> SEQ ID NO: 11
136 <211> LENGTH: 736
137 <212> TYPE: DNA
138 <213> ORGANISM: Endobugula sertula
140 <400> SEQUENCE: 11
141 aaattgggtg atccgataga agtcgagaca ttggcagaat cgtttcgagt ctatacggac      60
142 aagcgtcatt actgtgctct ggggtcggta aaaagtaata ttggtcattt gggggtaggt     120
143 gctgggatag cgggcgtgac caaagtattg ttgtctttgc agcatcgcat gttaccaccg     180
144 acgattcatt gtgaggatgt aaacccacag attgcgttgg aaggtagccc cttttatatc     240
145 aatacggaat taaagccttg gcagtctggt gacggtatac cacgacgggc tggtgtcagt     300
146 tcttttggtg tcagtggtac caatgcacat cttgtattag aagaatatac tcaccgagta     360
147 acatcaccat tacaaaatac tattttaccc cagaacggtt tgtttattgt tccactatct     420
148 gcaaaaaatg atgaatgctt aaatgcttgt gtcgaacgac tgttattttt tctaaaaagc     480
149 aggcaatccg atacatataa aaaatattcc ttaagtgata cagctcctat attgttagat     540
150 ttagcatata ccctccaggt cagtagggaa gcgatgacaa aacgagttgc ctttgtagtg     600
151 aaaacaacaa tagagttaat ggaaaaatta aatgcattta tagaaaaaca aaatactata     660
152 aaagcaagta atataaaagg ttgttactac tcttcgacta aaacatcgag tccatttgat     720
153 aatgaatcga ctgatc                                                    736
155 <210> SEQ ID NO: 12
156 <211> LENGTH: 245
157 <212> TYPE: PRT
158 <213> ORGANISM: Endobugula sertula
160 <400> SEQUENCE: 12
161 Lys Leu Gly Asp Pro Ile Glu Val Glu Thr Leu Ala Glu Ser Phe Arg
162  1               5                  10                  15
163 Val Tyr Thr Asp Lys Arg His Tyr Cys Ala Leu Gly Ser Val Lys Ser
164             20                  25                  30
165 Asn Ile Gly His Leu Gly Val Gly Ala Gly Ile Ala Gly Val Thr Lys
166         35                  40                  45
167 Val Leu Leu Ser Leu Gln His Arg Met Leu Pro Pro Thr Ile His Cys
168     50                  55                  60
169 Glu Asp Val Asn Pro Gln Ile Ala Leu Glu Gly Ser Pro Phe Tyr Ile
170 65                  70                  75                  80
171 Asn Thr Glu Leu Lys Pro Trp Gln Ser Gly Asp Gly Ile Pro Arg Arg
172                 85                  90                  95
173 Ala Gly Val Ser Ser Phe Gly Val Ser Gly Thr Asn Ala His Leu Val
174             100                 105                 110
175 Leu Glu Glu Tyr Thr His Arg Val Thr Ser Pro Leu Gln Asn Thr Ile
176         115                 120                 125
177 Leu Pro Gln Asn Gly Leu Phe Ile Val Pro Leu Ser Ala Lys Asn Asp
178     130                 135                 140
179 Glu Cys Leu Asn Ala Cys Val Glu Arg Leu Leu Phe Phe Leu Lys Ser
180 145                 150                 155                 160
181 Arg Gln Ser Asp Thr Tyr Lys Lys Tyr Ser Leu Ser Asp Thr Ala Pro
182                 165                 170                 175
```

RAW SEQUENCE LISTING DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:03

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

Ile Leu Leu Asp Leu Ala Tyr Thr Leu Gln Val Ser Arg Glu Ala Met
180 185 190
Thr Lys Arg Val Ala Phe Val Val Lys Thr Thr Ile Glu Leu Met Glu
195 200 205
Lys Leu Asn Ala Phe Ile Glu Lys Gln Asn Thr Ile Lys Ala Ser Asn
210 215 220
Ile Lys Gly Cys Tyr Tyr Ser Ser Thr Lys Thr Ser Ser Pro Phe Asp
225 230 235 240
Asn Glu Ser Thr Asp
245

<210> SEQ ID NO: 13
<211> LENGTH: 312
<212> TYPE: DNA
<213> ORGANISM: Endobugula sertula
<400> SEQUENCE: 13

cgattaggtg atccaattga attggcagca ctctcgaagg cgtttgagga gggaacacaa 60
cgaaaacagt tttgcggtat cggttcagta aaatcaaata ttggtcatct ggatgttgct 120
gctggagtcg ttggtctgat caagacagca ttgtcgctgc agcaccgttt gttgcctccc 180
acgatcaact acgaagcacc caatcgggaa atcaattttg aacaatcacc ctttcatgtg 240
attgatgaac tcacggagtg gcggggtcaa ggtggaccac ttcgtgctgg tgtcagctcg 300
tttggaattg gt 312

<210> SEQ ID NO: 14
<211> LENGTH: 104
<212> TYPE: PRT
<213> ORGANISM: Endobugula sertula
<400> SEQUENCE: 14

Arg Leu Gly Asp Pro Ile Glu Leu Ala Ala Leu Ser Lys Ala Phe Glu
1 5 10 15
Glu Gly Thr Gln Arg Lys Gln Phe Cys Gly Ile Gly Ser Val Lys Ser
20 25 30
Asn Ile Gly His Leu Asp Val Ala Ala Gly Val Val Gly Leu Ile Lys
35 40 45
Thr Ala Leu Ser Leu Gln His Arg Leu Leu Pro Pro Thr Ile Asn Tyr
50 55 60
Glu Ala Pro Asn Arg Glu Ile Asn Phe Glu Gln Ser Pro Phe His Val
65 70 75 80
Ile Asp Glu Leu Thr Glu Trp Arg Gly Gln Gly Gly Pro Leu Arg Ala
85 90 95
Gly Val Ser Ser Phe Gly Ile Gly
100

<210> SEQ ID NO: 15
<211> LENGTH: 324
<212> TYPE: DNA
<213> ORGANISM: Endobugula sertula
<400> SEQUENCE: 15

caattgggcg accctattga actgcaagca ctggccgatg tgtatagagt tgataactgg 60
cgcaaaaaca cctgtgccct cggctcggta aaaagcaata ttggccatac ctctgcggcc 120
tctggtgtgg ctggtataca caaggtgctg ttatcgctta agcatcgaca attagtagcg 180
agcctgcatt ttaatagcgc caatcaccac tttgattttc aacagtcgcc tttttatgtc 240

RAW SEQUENCE LISTING DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:03

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

```
238 aatacccagc taaggccctg ggatcaagca gagggactag aagaaagccg ccgccgggct     300
239 gcggtcagtt cttttggtgt cagt                                           324
241 <210> SEQ ID NO: 16
242 <211> LENGTH: 108
243 <212> TYPE: PRT
244 <213> ORGANISM: Endobugula sertula
246 <400> SEQUENCE: 16
247 Gln Leu Gly Asp Pro Ile Glu Leu Gln Ala Leu Ala Asp Val Tyr Arg
248  1               5                  10                  15
249 Val Asp Asn Trp Arg Lys Asn Thr Cys Ala Leu Gly Ser Val Lys Ser
250             20                  25                  30
251 Asn Ile Gly His Thr Ser Ala Ala Ser Gly Val Ala Gly Ile His Lys
252         35                  40                  45
253 Val Leu Leu Ser Leu Lys His Arg Gln Leu Val Ala Ser Leu His Phe
254     50                  55                  60
255 Asn Ser Ala Asn His His Phe Asp Phe Gln Gln Ser Pro Phe Tyr Val
256 65                  70                  75                  80
257 Asn Thr Gln Leu Arg Pro Trp Asp Gln Ala Glu Gly Leu Glu Glu Ser
258                 85                  90                  95
259 Arg Arg Arg Ala Ala Val Ser Ser Phe Gly Val Ser
260             100                 105
262 <210> SEQ ID NO: 17
263 <211> LENGTH: 308
264 <212> TYPE: DNA
265 <213> ORGANISM: Endobugula sertula
267 <400> SEQUENCE: 17
268 gagtatggag atccaatgga attgacggct gcagctgccg tctttggacg aggacgaaat      60
269 cagaaaaatc gtttgctggt cggatcagta aaagccaata ttagtcacct ggaagcagcc     120
270 gggggtattt ctggactgat caaagcagta ctggcaatgc agcatggcgt gattccacag     180
271 caattacact gcaaagaacc gagtcctcat atcccctgga aacgtctgcc tctcgatttg     240
272 gtacaagagc agactgtctg gccggaaagt gaagagcgga tcgcggctgt aacagcgtcg     300
273 gattagcg                                                             308
275 <210> SEQ ID NO: 18
276 <211> LENGTH: 101
277 <212> TYPE: PRT
278 <213> ORGANISM: Endobugula sertula
280 <400> SEQUENCE: 18
281 Glu Tyr Gly Asp Pro Met Glu Leu Thr Ala Ala Ala Ala Val Phe Gly
282  1               5                  10                  15
283 Arg Gly Arg Asn Gln Lys Asn Arg Leu Leu Val Gly Ser Val Lys Ala
284             20                  25                  30
285 Asn Ile Ser His Leu Glu Ala Ala Gly Gly Ile Ser Gly Leu Ile Lys
286         35                  40                  45
287 Ala Val Leu Ala Met Gln His Gly Val Ile Pro Gln Gln Leu His Cys
288     50                  55                  60
289 Lys Glu Pro Ser Pro His Ile Pro Trp Lys Arg Leu Pro Leu Asp Leu
290 65                  70                  75                  80
291 Val Gln Glu Gln Thr Val Trp Pro Glu Ser Glu Glu Arg Ile Ala Ala
292                 85                  90                  95
```

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:04

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:37 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:50 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2
L:388 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24
L:625 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:626 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:627 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:628 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:647 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:648 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:649 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:650 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:651 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:654 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:655 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:661 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:662 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:663 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:664 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:665 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:676 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:685 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:686 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:687 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:689 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:693 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:698 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:701 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:702 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:703 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:30
L:716 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:731 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:732 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:733 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:734 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:735 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:737 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:739 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:740 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:758 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:759 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:761 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:763 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:764 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:776 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:782 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:789 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31

VERIFICATION SUMMARY DATE: 09/19/2001
PATENT APPLICATION: US/09/775,938A TIME: 10:32:04

Input Set : A:\09-775938 Sequence listing.txt
Output Set: N:\CRF3\09192001\I775938A.raw

L:796 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:797 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31
L:799 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:31